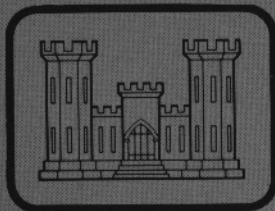
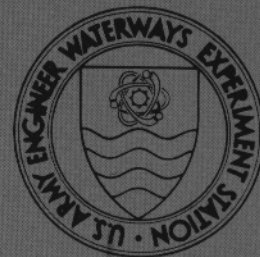


SYNTHESIS OF RESEARCH RESULTS



DREDGED MATERIAL RESEARCH PROGRAM



TECHNICAL REPORT DS-78-21

GUIDANCE FOR LAND IMPROVEMENT USING DREDGED MATERIAL

December 1978
Final Report

Approved For Public Release; Distribution Unlimited

Prepared for Office, Chief of Engineers, U. S. Army
Washington, D. C. 20314

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report discusses certain dredged material disposal alternatives and provides guidelines and concepts in planning for land improvement projects using dredged material. It draws information from Dredged Material Research Program (DMRP) research reports, literature surveys, field demonstrations, and greenhouse studies to provide guidance in land improvement projects. Environmental, technical, economic, social, and legal aspects of projects are presented as well as outlines of project planning procedures and dredged material (Continued)		

20. ABSTRACT (Continued).

transport systems. Three dredged material land improvement techniques are detailed: surface mine reclamation, sanitary landfill, and agricultural use. Planning, construction, and equipment considerations are presented for each technique. Local, state, and Federal government sources who have jurisdiction or expertise in the various aspects of land improvement projects are included in the report.

The report describes techniques for land improvement which utilize dredged material productively as alternatives to conventional disposal methods in regions where land acquisition is difficult and open-water disposal infeasible. The Appendices provide summaries of DMRP research upon which this report is based.

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PREFACE

This report provides concepts and guidelines for planning and implementing land improvement projects using dredged material. It synthesizes research conducted as part of Tasks 3B and 4C of the Dredged Material Research Program (DMRP) sponsored by the Office, Chief of Engineers, U. S. Army. The report was written as part of the DMRP Productive Uses Project (PUP), Mr. Thomas R. Patin, Project Manager.

The project was conducted by the Environmental Engineering Division (EED) of the Environmental Laboratory (EL), U. S. Army Engineer Waterways Experiment Station (WES), under the general supervision of Dr. John Harrison, Chief, EL; Dr. Roger T. Saucier, Special Assistant, EL; and Mr. Andrew J. Green, Chief, EED. The work was under the direct supervision of Mr. Raymond L. Montgomery, Chief, Design and Concept Development Branch (DCDB), EED.

This report was written by Ms. Patricia A. Spaine and Mr. José L. Llopis, DCDB, and Dr. Eugene R. Perrier, Ecosystems Research and Simulation Division. This report is also being published as Engineer Manual 1110-2-5009.

Director of WES during this study was COL John L. Cannon, CE. Technical Director was Mr. F. R. Brown.

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CONVERSION FACTORS, U. S. CUSTOMARY TO METRIC (SI)
UNITS OF MEASUREMENT

U. S. customary units of measurement used in this report can be converted to metric (SI) units as follows:

<u>Multiply</u>	<u>By</u>	<u>To Obtain</u>
acres	4046.873	square metres
cubic yards	0.7645549	cubic metres
dollars per cubic yard	1.3079505	dollars per cubic metre
dollars per cubic yard per mile (U. S. statute)	0.8127227	dollars per cubic metre per kilometre
feet	0.3048	metres
gallons (U. S. liquid) per day per square foot	40.745853	litres per day per square metre
horsepower (550 ft-lbf/sec)	745.6999	watts
inches	2.54	centimetres
inches per yard	2.777777	centimetres per metre
miles (U. S. statute)	1.609344	kilometres
miles (U. S. statute) per hour	1.609344	kilometres per hour
pounds (mass) per acre	0.00012085	kilograms per square metre
pounds (mass) per cubic foot	16.01846	kilograms per cubic metre
tons (2000 lb mass)	907.18474	kilograms
tons (2000 lb mass) per acre	0.22417	kilograms per square metre